



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,025	04/08/2005	Anthony Victor Bridgwater	063511-9072-00	3623
23409 7590 09/05/2007 MICHAEL BEST & FRIEDRICH LLP 100 E WISCONSIN AVENUE Suite 3300 MILWAUKEE, WI 53202			EXAMINER YOUNG, NATASHA E	
			ART UNIT 1709	PAPER NUMBER
			MAIL DATE 09/05/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/501,025	Applicant(s) BRIDGWATER ET AL.	
	Examiner Natasha Young	Art Unit 1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-15 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/11/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1709

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: On page 1, 2<sup>nd</sup> paragraph a hyphen should be inserted between the words "high" and "applied". The words "aluminium" (see page 7, 2<sup>nd</sup> paragraph) and "themolysis" (see page 9, 1<sup>st</sup> paragraph) are misspelled. If element 36a (see page 6, line 10) is not shown in the figures disclose that information in the specification.

Appropriate correction is required.

### ***Claim Objections***

Claim 5 is objected to because of the following informalities: Commas should be inserted after the words "the" and "each" in claim 5. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 6, and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Watabe (JP 2000-290660).

Regarding claim 1, Watabe teaches an ablative thermolysis reactor comprising:

(i) a reaction vessel (see Abstract), (ii) an inlet into the reaction vessel for receiving feedstock is implied to which the waste material enters the carbonization plant (see Abstract), (iii) an outlet from the reaction vessel for discharging thermolysis product (see

Art Unit: 1709

figure 1), (iv) within the reaction vessel, an ablative surface defining the periphery of a cylinder (see figure 3, element 30 is the ablative surface), (v) heating means arranged to heat said ablative surface to an elevated temperature (see paragraph 6, where element 30 is installed in coke oven chamber, and paragraph 0009), and (vi) at least one rotatable surface, the or each rotatable surface having an axis of rotation coincident with the longitudinal axis of said cylinder, wherein the rotatable surface is positioned relative to the ablative surface such that feedstock is pressed between a part of the rotatable surface and said ablative surface and moved along the ablative surface by the rotatable surface, whereby to thermolyse said feedstock (see paragraph 0006 and figure 1).

Claims 4, 6, and 13-14 depend on claim 1 such that the reasoning used to reject claim 1 will be used to reject the dependent portions of the claims.

Regarding claim 4, Watabe teaches the reaction vessel is bounded by an outer peripheral wall with the ablative surface being defined by an inwardly facing surface of said outer wall (see figures 3 and 4, element 30 represent the ablative surface).

Regarding claim 6, Watabe teaches said ablative surface has a circular or elliptical cross-section perpendicular to the axis of rotation of the or each rotatable surface (see paragraph 0006 and figures 2 and 3).

Regarding claim 13, Watabe teaches the or each rotatable surface is resiliently biased toward the ablative surface (see paragraph 0006 and figure 1).

Regarding claim 14, Watabe teaches a plurality of rotatable surfaces are provided, the rotatable surfaces preferably being equi-angularly displaced about the axis of rotation (see paragraph 0006 and figure 1).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5, 7 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watabe (JP 2000-290660) in view of Aida et al (JP 11-216444).

Claim 5 depends on claim 4 such that the reasoning used to reject claim 4 will be used to reject the dependent portions of the claim.

Regarding claim 5, Watabe does not teach the, or each, rotatable surface is mounted outwardly of the ablative surface and arranged to press feedstock toward the axis of rotation.

Watabe teaches an ablative surface (see figure 1, element 30 represent the ablative surface).

Aida et al teaches the or each rotatable surface is mounted outwardly and arranged to press feedstock toward the axis of rotation (see figure 1 where 14 and 15 are the rotatable surface and 13 is the revolving shaft).

Aida et al does not teach an ablative surface.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Watabe with the teachings of Aida et al, such that the plates of the Watabe reference are not fixed but rotate within the reaction vessel, to ensure reaction of the feedstock.

Claim 7 depends on claim 1 such that the reasoning used to reject claim 1 will be used to reject the dependent portions of the claim.

Regarding claim 7, Watabe does not teach at least one of said rotatable surfaces is in the form a rotatable blade.

Art Unit: 1709

Watabe teaches plates and rotating impellers (see paragraph 0006).

Aida et al teaches a plate-like stirring member (see paragraph 0004).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Watabe with the teachings of Aida et al to effectively decrease the size of the waste feedstock.

Claim 9 depends on claim 7 such that the reasoning used to reject claim 7 will be used to reject the dependent portions of the claim.

Regarding claim 9, Watabe teaches said heating means is arranged to heat the ablative surface by electrical heating, by the combustion of a solid, liquid or gaseous fuel, by condensation of a vapour, or by circulation of a hot fluid (see paragraph 0006).

Claim 10 depends on claim 1 such that the reasoning used to reject claim 1 will be used to reject the dependent portions of the claim.

Regarding claim 10, Watabe does not teach means are provided to adjust the angle of the rotatable surface, or front surface of each blade when present, relative to the ablative surface.

Watabe teaches plates and rotating impellers (see paragraph 0006).

Aida et al teaches a pivotable plate-like stirring member (see paragraph 0004).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Watabe with the teachings of Aida et al to effectively decrease the size of the waste feedstock in situations where trash may be caught in the clearance (see Aida et al paragraph 0004).

Claim 11 depends on claim 10 such that the reasoning used to reject claim 10 will be used to reject the dependent portions of the claim.

Regarding claim 11, Watabe does not teach angle adjustment means are provided to adjust independently each rotatable surface or blade when present

Watabe teaches plates and rotating impellers (see paragraph 0006).

Aida et al teaches a pivotable plate-like stirring member (see paragraph 0004).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Watabe with the teachings of Aida et al to effectively decrease the size of the waste feedstock in situations where trash may be caught in the clearance (see Aida et al paragraph 0004).

Claim 15 depends on claim 1 such that the reasoning used to reject claim 1 will be used to reject the dependent portions of the claim.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watabe (JP 2000-290660) in view of Rotter (US 4,308,103).

Regarding claim 15, Watabe does not teach said reactor is provided with a continuous feed mechanism for supplying feedstock into said reaction vessel.

Rotter teaches said reactor is provided with a continuous feed mechanism for supplying feedstock into said reaction vessel (see column 2, 2<sup>nd</sup> paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Watabe with the teachings of Rotter for continuous production of the desired product.



Art Unit: 1709

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watabe (JP 2000-290660).

Claim 8 depends on claim 1 such that the reasoning used to reject claim 1 will be used to reject the dependent portions of the claim.

Regarding claim 8, Watabe discloses the claimed invention except for said heating means is adapted to heat said ablative surface to a temperature in the range of from about 400°C to about 700°C.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to heat said ablative surface to a temperature in the range of from about 400°C to about 700°C, since it has been held that where the general conditions of a claim are disclosed on the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

#### ***Allowable Subject Matter***

Claims 2-3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The limitation of reaction vessel is bounded by an inner wall with the ablative surface being defined by an outwardly facing surface of said inner wall (i.e. convex ablative surface) could not be found in the prior art.

#### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hirai (US 5,424,039).

Art Unit: 1709

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natasha Young whose telephone number is 571-270-3163. The examiner can normally be reached on Mon-Thurs 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NY

  
WALTER D. GRIFFIN  
SUPERVISORY PATENT EXAMINER